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spring sledging over the Arctic Sea, as outlined in Captain Mikkelsen's letter above.

At the time Mr. Stefansson wrote he had not seen Mr. Leffingwell. If he met him later, the plans outlined in his letter to the Society may have been changed. He adds that after joining Harrison, they expected to hunt eastward from Eskimo Lake, and hoped to cache deer meat towards the Anderson River and perhaps as far as the Horton (River la Roncière). With the lengthening days in March they planned to sledge eastward with one team and two or three Eskimos to the mouth of the Coppermine River, and then return along the coast, mapping it if there was time. Mr. Stefansson expected to be back at Herschel Island late in July to meet the *Duchess of Bedford.* His letter concludes:

> I am spending the winter very profitably. The house is full of Eskimo talk all the time, though there are two white men in it. I am learning the language, and am gaining an insight into the native character and familiarity with the native habits.

GEOGRAPHICAL RECORD.

AFRICA.

Delimiting International Frontiers.—The total length of international frontiers traversed by British Boundary Commissions in Africa up to August, 1906, is 9,081 miles.

The following are the stages in the business of delimiting an international frontier: First there is an international agreement drawn up on broad lines; each Government then appoints Commissioners, who meet at one end of the boundary and march along it, exploring and mapping the boundary zone. The Commissioners, having arrived at the other end, agree upon the geographical position of the principal features and decide upon the details of the frontier, paying special attention to the incidence of tribal boundaries and to the future nationality of the villages. They then march back along the line, erect pillars and inform the chiefs. A protocol in duplicate is drawn up and signed, and each Chief Commissioner forwards the protocol and maps with a report to his Government. The protocol is then approved by the two Governments, and in some instances a fresh agreement on the terms of the protocol (with, perhaps, minor modifications) is drawn up and signed by representatives of the Governments.

The technical work of boundary commissions has shown steady improvement, and these commissions have had a considerable share in stimulating interest in geographical surveying. Excellent technical work has been carried out by the most recent commissions—the Yola-Chad, the Anglo-German (Uganda), the Victoria-Kilimanjaro, and the Anglo-Portuguese (Zambezi). To these and other commissions we owe much exact geographical knowledge—a most useful asset to the Protectorates concerned.

The delimitation of international frontiers has been an indirect means of surveying some of the outlying portions of the tropical Protectorates. In fact, in most of the British tropical African possessions the perimeter is more accurately mapped than the interior. There are now no "hinterlands" in British Africa, the partition of the continent is complete, and the boundaries are, with few exceptions, well defined. (Annual *Report* of the Colonial Survey Committee to August 1906, No. 500, London.)

COTTON IN NORTHERN NIGERIA.—The British Cotton Growers' Association estimated, not long ago, that Northern Nigeria would be likely to produce, at some future time, at least 7,000,000 bales of cotton, or sufficient to supply the whole requirements of Great Britain and leave a very large quantity for other cotton-consuming countries. In commenting upon this estimate in his recent report, Sir F. Lugard says that it is based on data supplied by the Association's own experts, after several years of careful inquiry, and is therefore entitled to consideration. He thinks, however, that it is too optimistic, seeing that the development of so large an industry needs a correspondingly large population, which does not at present exist in Northern Nigeria. "But," he continues, "the Kano Emirate is densely populated by an industrious race who are keen agriculturists and have cultivated cotton for 1,000 years. Given a means of transport which can convey the cotton at low freights to the Niger waterway, I anticipate a great development of this industry, which may some day go far towards realizing the hopes of the Association."

It is worthy of mention that not a few whites returning from western Africa say that, even if the growing of cotton for export is possible in the West African countries, it will not be practicable until ample means of cheap transportation are provided, as cotton cannot profitably be carried far excepting at low rates of freight.

AMERICA.

DRAINAGE IN ILLINOIS.—Dr. H. Foster Bain, State Geologist of Illinois, is collecting data bearing upon the reclamation of 2,000,000 acres of swamp and overflow lands still existing within the State limits. The advisability of the systematic draining of such lands is nowhere better illustrated than in Illinois. The pioneer settlers chose homesteads along the stream courses where narrow strips of timber afforded shelter and fuel. The open prairie lands near them were in many places overspread with the waters of shallow and sluggish streams for many months of the year. Wide areas of prairie were, for this reason, regarded as so unpromising that they did not bring at auction more than a few cents an acre.

The State Legislature finally enacted drainage laws, and the enormous task of reclaiming large districts slowly progressed. The success of underground tile drainage gave a great impetus to the work. In 1880 large regions in the central part of the State were sold at $20 to $25 a acre. To-day, these lands are worth from $150 to $175 an acre, and are classed among the choice farm lands of Illinois. It is assumed that the drainage of the remaining swamp and overflow lands will be more difficult and expensive and that the private citizen will be unable to bear the burden of the entire work. This is the reason that the Legislature decided upon the investigation which Dr. Bain is making.

As much of this wet land is found along river bottoms, the drainage problem is closely related to that of the improvement of the river channels. Reliable topographic maps have not yet been made of many of these areas, but they will probably be supplied in the near future through the Geological Survey of the State which is now co-operating with the Federal Survey in the topographic mapping of Illinois.

SALTON LAKE CIRCUMNAVIGATED.—An expedition from the Desert Laboratory of the Carnegie Institution, conducted by Dr. D. T. MacDougal, has recently circumnavigated Salton Lake in a sail boat. *Science* says (No. 637) that the lake was found to have a length of over fifty miles and an area of nearly seven hundred square miles. Although the break in the banks of the Colorado River from which the main channel leads to the lake was closed on February 10, yet minor channels and seepage poured sufficient water into the lake to maintain its level during the month following at the maximum depth. It is therefore to be expected that the present level may be retained for some time, and that the evaporation may not exceed the inflow by as much as fifty inches during the present year. Five stations were located and surveyed for the study of the reoccupation of the basin by vegetation as the lake recedes. A second sunken basin south of the Salton and lying between the Cucopa Mountains and the main range of Baja California in Mexico was traversed by wagon, skirting the shores of a lake which partially fills it. This basin seems to be subject to more frequent overflow from the delta, and during 1905 a lake thirty miles long and fifteen wide was formed, which has now shrunken to a third of the dimensions given. Some important material and data bearing upon the plants and animals living in saline waters, hot springs and clay deserts were obtained.

TERRACES OF THE WEST RIVER, BRATTLEBORO, VERMONT.—The Miller-Davis theory in regard to the origin of river terraces has been tested by E. F. Fisher (Proc. Boston Soc. Nat. Hist., vol. 33, pp. 9-42, 1906). She has applied it to the explanation of the terraces found along West River in Vermont, near its junction with the Connecticut. This theory, as stated by Miss Fisher, is that

> the river terraces of New England may be accounted for by the behavior of meandering and swinging streams slowly degrading previously aggraded valleys without necessary change in volume, and by the control exerted here and there over the lateral swinging of the streams through the discovery of rock ledges.

Prof. Fisher regards this theory as adequate to account for the features noted in the region studied. She describes the lateral swinging of rivers by meanders, cut-offs and short cuts, and gives an account of a fourth process, called the "partition process," which occurs when for any reason the swiftest current of a stream is withdrawn from a bank of erosion, with the resulting formation of a sandbar not continuous with the eroded bank, and therefore parting the stream. The deeper channel eventually acquires the entire stream, the deserted channel and former island are added to the floodplain, and the stream has thus moved laterally a certain distance.

Miss Fisher writes:

> The oldest terraces not only weather to a gentler slope, but, also, their edges are rounded off, which means that a convex slope of erosion is formed above and a concave slope of deposition below. Very excellent examples of this may be found by a careful study of the terraces in our valleys, where the dissection of the highest and oldest terraces has been so excessive as fairly to separate them into individual plains, severed by sharp and deeply incised valleys of erosion. Ar first sight they appear like delta sand plains with lobate margins.

The writer of this notice suggests, from a study of the excellent illustrations which accompany the article, that some of these high level deposits may be delta-terraces, formed before the ice had melted from the centres of the valleys of the Connecticut and West rivers. F. P. G.

MAPS ILLUSTRATING LAND FORMS.—The United States Geological Survey has selected 100 of its atlas sheets to illustrate a variety of physiographic forms. A list of the sheets has been published as a leaflet, giving under each sheet the principal physiographic form or forms which it illustrates. With the list is a cross-reference list showing the sheets on which each topographic form is illustrated. For example, aggrading streams are illustrated on the Maxwell (Cal.) sheet, alluvial fans on the Cucamonga (Cal.) sheet, anticlinal mountains on the Cloud Peak (Wyo.) sheet, denuded plateaus on the Corazon (N. Mex.) sheet, dissected fault blocks on the Needles (Ariz.) sheet, glaciated topography on the Becket (Mass.) sheet, lacustrine plains on the Amargosa (Nev.-Cal.) sheet, kettle moraines on the Edgeley (N. Dak.) sheet, wind erosion on the Coldwater (Kans.) sheet, etc. It can easily be seen that these atlas sheets with the aid of such a list will prove very helpful to teachers of Physiography.

The set of 100 sheets with the leaflet is sold for $3.

THE MUZO EMERALD MINES.—The largest source of the world's supply of emeralds is Muzo, in the eastern part of Colombia. The Colombian Government, last year, sent an English engineer to inspect the mine, from which the Government derives large revenue. In his report, he says that the mines are situated in the State of Boyaca, a few miles from the small town of Muzo. This district, though hot, is healthful, and water and timber are abundant, the land is fertile, and labour is easily obtainable. The emerald deposits vary in height from 3,000 to 4,000 feet above sea-level. They extend over many leagues, and the Government property alone is estimated at 40,000 hectares. For some time there has been scarcity of water at the mines, and there are other impediments that interfere with the full development of the industry. The report deals chiefly with suggestions for overcoming these difficulties, etc. The engineer estimates that, when the proper improvements are made, the mines, adequately worked, will yield an annual profit of at least $1,000,000. He believes, in fact, that the only limit to production will be the quantity that can be sold without seriously reducing the price of emeralds.

ASIA.

A NEW VOLCANIC ISLAND.—Commander Beauchamp, in charge of the Marine Survey of India, has sent to London a description of Volcano Island, derived from examination made about sixteen days after its appearance above water (*Nature,* No. 1948). The island is off the coast of Arakan in the Bay of Bengal, nine miles northwest of Cheduba Island, and has a greatest length of 307 yards in a S.S.W. and N.N.E. direction, with a greatest breadth of 217 yards in a N.W. and S.E. direction. The summit is nineteen feet above high water. The soundings in the neighbourhood, except close to the shore, appear to be unaltered by the eruption. The island is still in an active condition at the northern end, several hot springs of liquid mud overflowing. It is steeper on the western side.

Temperatures (Fahr.) were taken at different parts, the surface registering 81°, being the same as the atmosphere; at two feet below the surface, 96°; three feet below, 104°. At the observation spot on the summit, evidently the main crater, the temperature at one foot below the surface was 104°; at two feet below, 108°; at three feet below, 138°; and at three and a half feet the temperature rose to 148°. The island is becoming hard; but the sea and tide are washing it away considerably, leaving a wake of discoloured water. The Admiralty charts show that several mud volcanoes exist in the neighbourhood. The island is composed wholly of grayish-brown mud of uniform quality, intermingled with which are a few angular fragments of rock. These include portions of laminated sandstones—a compact grey rock which has the appearance of a limestone, but is only partially soluble in strong acids; lumps of crystalline calcite, and a soft green stone, probably a basic igneous rock. These must have been thrown up with the mud.

On December 31, the surface was sun-dried and hardened, with a very uneven, nodular, and bubbly appearance, and also split by deep fissures, due to shrinkage in drying. It readily supported the weight of a man. On the north side of the island are several small vents, three of them opening into pools of liquid mud, to the surface of which gas bubbles are continually rising. This gas is not inflammable, and it has a sulphurous smell. The heavy rains and sea action in the southwest monsoon, it is likely, will cause the rapid disintegration and total disappearance of the island, if no more material is erupted.

RUBBER IN CEYLON.—The official account of the Ceylon Rubber Exhibition, held in the Royal Botanic Gardens, Peradeniya, in September, 1906, gives an excellent idea of the rapid growth of the industry in that island. Five years ago there were only 2,500 acres under rubber in Ceylon, and to-day there are 104,000 acres, the *Hevea brasiliensis* being the species most extensively planted. This tree produces the well-known Pará rubber, which, prepared in the ordinary way, possesses 90 to 95 per cent. of caoutchouc. The account, also, contains the lectures, discussions, judge's reports, etc., which were a feature of the exhibition, and these have been brought together in the present volume and arranged in logical order, with the hope of making this account a standard treatise upon the rubber industry as it now exists.

EUROPE

EARLY EXHAUSTION OF THE SOUTH RUSSIAN IRON MINES.—The United States Consul at Riga reports that it is estimated that the iron ore mines of south Russia will be exhausted within the next twenty to thirty years. They are now the largest producers of iron ore in the Empire. When they are no longer available the Ural district is destined to become the largest producer of iron and steel in Russia.

THE GEOLOGICAL SOCIETY OF LONDON.—The celebration of the centenary of this Society will be held in September next. At the February meeting, Sir Archibald Geikie, the President, said that invitations to attend the meetings will be sent to all the foreign members and foreign correspondents of the Society. Geological Societies, Geological Surveys, and learned institutions which have a geological side will be asked to send delegates. The official programme will probably extend over three days in London. In his address, Sir Archibald will sketch the state of geological science outside of Great Britain at the time when the Geological Society of London was founded and indicate the external influences that affected the young Society. Excursions to places of geological note will precede and follow the meeting.

PUBLICATION OF THE THIRD VOLUME OF RICHTHOFEN'S WORK ON CHINA.—Acting on a Memorial presented by the Berlin Geographical Society, the Emperor of Germany has granted the sum of 10,000 marks for the publication of the third volume of Richthofen's work on China. The Academy of Sciences in Berlin has contributed 6,000 marks and the publisher of the book 4,000 marks, so that its production seems assured.

CALABRIAN EARTHQUAKES.—Two recent articles by Professor W. H. Hobbs* are of more than usual interest to students of seismology. These two articles, illustrated by numerous photographs in the text and plates, and accompanied by a number of interesting tables, clearly prove the passing of the centrum theory of earthquakes which was so long followed by geologists.

Professor Hobbs was *en route* to study the geology of Calabria when the devastating earthquake of 1905 occurred. This earthquake, which cost upwards of 800 lives, and caused nearly complete destruction to numerous villages throughout Calabria, was the most severe which has visited the province since 1785. The instability of the Italian peninsula is attested by the fact that about ten earthquakes are felt there every year, and southern Italy is most seriously affected.

From Prof. Hobbs' careful study of the records of the 1905 earthquake, and from his tabulation of the records of the previous great Calabrian earthquakes, it is evident that the damage is there largely localized either over or near fissure planes, and is to be ascribed either directly to the shearing movement upon these planes or to elastic waves which are transmitted mainly along them. At distances exceeding a kilometer on either side of the fault planes, the shocks for all save the greater disturbances are apparently impotent against well-construed houses. On the maps accompanying this paper the author has plotted the localities of greatest destruction, and from these maps it is evident at a glance that the earthquakes have exercised an apparent selective action, the damaged communes, and especially the ones most seriously injured, being arranged on essentially right lines, which in a general way run parallel to the bases of mountain masses. This result, from the plotting of all the important earthquakes during the last three centuries, is most striking. It happens that the communes are mainly established along the very lines of greatest seismicity—that is, along or near the base of the mountain masses. The principal reason for this has been the protection afforded by precipitous slopes in an age when man was particularly predatory in his habits. An additional reason for the selection is the fact that the olive, fig, and vine grow with special luxuriance in such neighbourhoods.

It is a noteworthy fact that the inhabitants of Calabria have not learned to build earthquake-resisting structures. In fact, the worst possible type of houses for an earthquake district appears to have been constructed and reconstructed through centuries, though the opportunity seems never to have been lost to point a moral after each succeeding disaster. Throughout much of the region houses are constructed from the rounded boulders that abound, and these are cemented by a weak mortar of home production, and roofed with tiles loosely supported upon poles. Prof. Hobbs says: "It is not too much to say that saving to life from proper house construction throughout Calabria would at the time of earthquakes reach fully three-fourths." He points out the fact that after almost total destruction by previous earthquakes some of the Italian communes have been located in new sites, in some cases, through chance selection, having secured a more stable foundation. As a consequence of the earthquake of 1905, many Calabrian towns must be largely rebuilt, and Professor Hobbs points out that it is of prime importance that in these cases a new site should be selected.

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* On some Principles of Seismic Geology, with an introduction by Eduard Suess (Sonderabdruck aus Gerlands Beiträgen zür Geophysik, Bd. VIII, Heft 2), Leipzig, 1907, pp. 219-292; and The Geotectonic and Geodynamic Aspects of Calabria and Northeastern Sicily, with an introduction by the Count de Montessus de Ballore, *Ibid.*, pp. 293-362.

From such studies as these by Professor Hobbs, much light is thrown upon the principles of seismology, and facts are brought forth which ought to have a very high value, if intelligently studied and followed, in all earthquake-stricken regions. It is evident that a scientific study of earthquakes is capable of locating danger-lines in the crust, and it would seem the height of folly for people to rebuild on sites so evidently dangerous. The lesson taught is capable of much wider application than to Calabria alone. R. S. T.

GERMAN COLONIAL STUDIES.—Eighty papers were read before the German Colonial Congress of 1905. A short review of the published proceedings appears in the "Literaturbericht" of *Petermanns Mitteilungen* (No. 1, 1907). The volume contains 1,055 pages, and the contents are valuable not only for the study of the German colonies but also for the light thrown upon colonial problems in general. The first section deals with the geography, ethnology, and natural history of the colonies. The late Dr. Kirchhoff described the progress of geographical exploration and Dr. Weule the present condition of ethnological exploration. Among other papers in this section, Mr. Meinhof wrote on African languages and Mr. Strauch on the geographical nomenclature of the German South Sea Islands. The second section is devoted to tropical hygiene and tropical medicine, and the third to the judicial and political conditions in the colonies. Missionaries fill the fourth section with papers which seem to demonstrate that harmonious action between teachers of the Protestant and Catholic faiths is possible in the efforts to help the natives rise to a higher plane. The concluding three sections deal with the economic conditions, the question of emigration from the mother country to the colonies, and the industrial relations between Germany and these outer parts of the Empire.

This brief summary of the work of the Congress impressively illustrates the fact that an immense amount of energy and trained talent are being given to researches which, it is expected, will in time vastly increase the value of tropical lands to their inhabitants and to the world at large.

POLAR.

ANOTHER BRITISH ANTARCTIC EXPEDITION.—The London *Times* (weekly edition, Feb. 15) announces that a new British south polar expedition will leave England in October next under the command of Mr. E. H. Shackleton, who was third lieutenant of the ship *Discovery* during the National Antarctic expedition commanded by Captain Scott. Mr. Shackleton has organized the expedition, which will go to the winter quarters of the *Discovery* in latitude 77° 50′ S., Victoria Land. The explorers will be landed and the ship will return to New Zealand, and a year later will go back to take the explorers home. One of Mr. Shackleton's aims is to make the nearest approach to the south pole. It is asserted that Scott's southern sledge party would have reached a much higher altitude if it had been more adequately equipped for sledge work; and in the new expedition, in addition to dogs, Siberian ponies will be taken, as the surface of the land or ice over which they will have to travel is suited for this mode of sledging. A novel feature will be the use of a motor car which, in the opinion of some explorers, may be made available for ice and snow travel. A type of car suitable for this work is being constructed.

METEOROLOGY IN THE ANTARCTIC.—News has been received from Buenos Aires to the effect that the Argentine research ship *Uruguay* has returned from a perilous voyage to Scotia Bay, South Orkney Islands, whither she went to take a party under the leadership of Mr. Angus Rankin to relieve the members of the meteorological staff, who had spent more than a year on that desolate island, continuing the meteorological and magnetic work initiated in March, 1903, by the Scottish Antarctic expedition. On the voyage of the *Uruguay,* heavy pack ice and hundreds of icebergs were encountered, and the vessel sustained considerable damage.

Upon her return to South America, the *Uruguay* took on board another party of meteorologists, consisting largely of members of the former Ben Nevis Observatory staff, under the leadership of Mr. Bee, and left for Wandel Island, at the southern extremity of Gerlache Strait, on the west side of Graham Land, where a new meteorological and magnetic station will be established.

The station at South Georgia is also being continued, and it is planned to install other observing parties in the South Sandwich group and also on the west side of the Falklands. All this work is in the hands of the Argentine Republic, whose meteorological service is in the highest state of efficiency. This comprehensive scheme of work will be certain to advance knowledge of the meteorology and magnetism of the area lying to the south and east of Cape Horn.

CHAPTERS ON POLAR RESEARCH.—Three chapters on polar research in the "History of all Nations" seem to need revision. As examples of inaccurate or inadequate statements may be mentioned: The notice of the Arctic expedition of Captain John Ross, on which his nephew, James Ross, located the north magnetic pole, omits to mention that most conspicuous incident of the enterprise; Peary did not name the Smith Sound Eskimos "Arctic Highlanders;" Captain Sverdrup's expedition to the Arctic archipelago north of our continent indeed "contributed important scientific results," but the writer fails to say that his discoveries added several large islands to the archipelago; Nansen's "Farthest North" was not made by way of Franz Josef Land; that "a German expedition [*Gauss*] established a magnetic station on Kerguelen Island" is true, But the *Gauss* party wintered farther south and discovered Gauss Land, which is not mentioned; the Swedish expedition under Nordenskiöld did not lose its "vessels" in the ice, as it had only one vessel to lose; the work of the Scottish Antarctic expedition is mentioned, but not that it discovered new land; the Charcot expedition did not prove the connection of Bismarck Channel with the sea to the east.

WILKES LAND.—In a notice written by Prof. J. W. Gregory (*Nature,* No. 1940) of Vol. II of the scientific results of the German South Polar Expedition, devoted to the geological investigations of the party, the writer says that the "most striking geographical achievement of the expedition was its determination that Antarctica occurs farther north in western Wilkes Land than had been inferred by some authorities from the work of the Challenger. Prof. von Drygalski and his comrades have reëstablished faith in Wilkes's Termination Land, as from their Kaiser Wilhelm Land they saw high land to the northeast only about 100 miles from the site assigned by Wilkes to his Termination Land."

VARIOUS.

POPULATION OF THE LEADING STATES OF THE EARTH AND THEIR INCREASE IN TEN YEARS.—According to the latest official information, the increase of population of the earth from 1895 to 1905 was about 63,000,000. The figures, in round numbers, of the leading countries are as follows:

	1895	1905
Russia	125,000,000	141,200,000
United States	68,934,000	83,143,000
Germany	52,279,000	60,605,000
Japan	42,271,000	47,975,000
Great Britain and Ireland	39,221,000	43,221,000
France	38,459,000	39,300,000
Italy	31,296,000	33,604,000
Austria	24,971,000	27,241,000
Hungary	18,257,000	20,114,000
Spain	18,157,000	18,900,900
Smaller Nations	47,732,000	54,166,000

Russia has the highest birth-rate with 49 per thousand, and also the highest death-rate with 31 per thousand. France, with 21 per thousand, has the lowest birth-rate, its death-rate being 19.6 per thousand, giving it the lowest increase in population. Spain, Italy, Austria, Hungary, and Japan have birth-rates of over 32 per thousand, but also high death-rates. The lowest death-rates among these powers is Japan, with 20; and the highest Spain, with 25.8 per thousand. Denmark shows the lowest death-rate, 13.9, and a birth-rate of 28.5 per thousand. England has a death-rate of 16.5 per thousand, but shows a decline in birth-rate to 27.6 per thousand. The population of great cities is given as follows:—London, 4,872,710; New York, 3,437,000; Paris, 2,714,000; Berlin, 2,040,000; Tokio, 1,819,000; Chicago, 1,699,000; Vienna, 1,675,000; Philadelphia, 1,294,000; St. Petersburg, 1,265,000; Moscow, 1,039,000; Buenos Aires, 1,026,000. (*British Blue Book.*)

The Journal of Geography completed its tenth volume with the number of December, 1906. Prof. R. E. Dodge, the editor and publisher, is to be congratulated upon the success of his efforts and those of his colleagues to establish a first-class educational periodical devoted to geography. The *Journal of Geography* has not appeared during the entire ten years under its present title, but the scope and character of the publication have been consistently preserved.

DR. EMIL PHILIPPI, private docent in the University of Berlin and geologist in the Drygalski south polar expedition, has accepted a call to the Häckel professorship of geology and palæontology in the University of Jena.

THE GERMAN COLONIAL SOCIETY has appropriated 3,000 marks to pay the expenses of the cartographer Paul Sprigade on a journey to Togo to make cartographic studies, in case this sum is not paid from the Imperial Treasury. His colleague Max Moisel will go to the Cameroons for a similar purpose at the cost of the Colonial Office and the Cameroons Government.

The same Society has voted the sum of 3,000 marks to missionary Jacob Spieth, to pay the cost of producing his work "Die Ewe Stämme," which Professor Luschan says is invaluable, not only for its scientific interest, but also for the good use that may be made of it in the material development of the Protectorate.

The *Boletin* of the Board of Public Works, Mexico (No. 5, 1906), is chiefly given to a description of the rebuilt railroad across the Isthmus of Tehuantepec, the country through which it runs, and the commercial advantages which it offers to the nations. A large number of photographs give aspects of the country and settlements along the railroad, and there are panoramas of the terminal seaports.

CAPTAIN AMUNDSEN, the Norwegian explorer, who recently sailed through the Northwest Passage in the *Gjöa,* has lectured before several Paris scientific societies and has been made commander of the Legion of Honor. Captain Amundsen expects to visit the United States in the autumn.

DR. GEORG SCHWEINFURTH celebrated his seventieth birthday a few weeks ago. Contemporaneous with some of the great pioneers in the modern exploration of Africa, he is one of the very few who are still alive. The work that first gave him enduring reputation was begun in 1869, when he explored the countries west of the upper White Nile, discovered the Akka dwarfs, and described the large tribes of the Niam Niam and the Monbuttu. In recent years he has made extended researches relating to Egyptian botany and archæology.

In The Life of Sir Charles J. F. Bunbury, Bart., just published by John Murray, the late naturalist relates many incidents of his intercourse with distinguished men during his long life. He gives in the second volume some account of his meetings with Humboldt, of whom he writes:

> He is a delightful old man, with all the courtesy and polish of an old Frenchman, and with a vivacity and activity of mind that are perfectly wonderful in a man of eighty-five. He is a little bent, but still hale and fresh looking . . . He has all the volubility of speech that I have so often heard of, but you may well suppose I was quite willing to listen and did not wish to say much. . . . What is particularly striking is his eager interest in all that is going on in all the world of science, his acquaintance with all the newest researches, and his constant desire for fresh information.

SIR F. LUGARD, in his recent report on northern Nigeria, says that his efforts to introduce the plough have thus far proved unsuccessful. He is now introducing among the natives a few simple tools, such as adzes, pickaxes, hammers, and saws, in the hope that they may become popular and create a demand.

The Government of the Gold Coast Colony (British) has made provision for a loan of over $6,000,000 to complete the Sekondi-Kumasi and Accra railroads and to build harbour works at Accra and Sekondi.

THE SIXTEENTH SESSION of the German Geographical Congress will be held in Nuremberg on May 21-25. The papers and discussions will be distributed in the following sections: 1, History of Geography; 2, Geography of North Bavaria; 3, Anthropogeography, with Historical Geography; 4, The Study of Lakes and Rivers; 5, Geographical Instruction.

THE AMERICAN GEOGRAPHICAL SOCIETY. A Regular Meeting was held at Mendelssohn Hall, No. 119 West Fortieth Street, on Tuesday, March 26, 1907, at 8.30 o'clock P. M.

President Huntington in the chair.

The following persons, recommended by the Council, were elected Fellows:

Charles C. Whinery, Richard Mortimer.

The President then introduced Mr. Edward S. Curtis, who addressed the Society on The Indian: His Races and His Lands.

Stereopticon views were shown.

On motion, the Society adjourned.

OBITUARY.

COUNT ZICHY.—Count Eugen Zichy von Vasonykeö, born in July, 1837, at Mihaly, Hungary, died in December last. He made journeys to Central Asia, partly to establish, if possible, the position of the original home of the Huns. In 1895-96, he visited the Caucasus and Central Asia, and travelled also in the same regions in 1897-99. His first journey was described in a book "Voyages au Caucase et en Asie centrale" (1897). His later travels were especially rich in various scientific results, which began to appear in book form in 1900 under the title "Dritte asiatische Forschungsreise des Grafen Eugen Zichy" (German and Hungarian). Several scientific collaborators assisted him in the preparation of a number of volumes of this work which have not yet been published. It is hoped that arrangements to bring them out have been made.

H. C. RUSSELL.—The death of H. C. Russell, Government Astronomer of New South Wales, is announced. He was seventy-one years old and had served New South Wales in that position since 1870. His geographical interests, also, were considerable. His studies threw light on the problem of Lake George in New South Wales, which at one time is a widespread sheet of water teeming with fish and then, during a period of desiccation its waters are evaporated and crops are raised on the lake floor. The colony was greatly indebted to him for his organization of the meteorological service, his labours in this field having contributed to its prosperity.

DR. ALFRED KIRCHHOFF.—Dr. Kirchhoff, Emeritus Professor of Geography in the University of Halle, died on Feb. 8, aged 68 years. He studied natural history in Jena and Bonn (1858-61), and, after years of work in the school room, became professor in the University of Halle in 1873. He retired from active educational life in 1904 to his home at Mockau, near Leipzig. He was a prolific writer, and his literary as well as his professional work established his place among leading geographers. Many editions of his text-books have been used in German schools. The interaction between geographical environment and organic and inorganic forms of life was one of his favourite subjects. His book *Mensch und Erde* was issued in an excellent English edition (E. P. Dutton & Co., New York) in 1906.

NEW MAPS.

AFRICA.

AFRICA.—Diagram to Illustrate the Progress of the Delimitation of British Frontiers in Africa. Scale, 450 miles to an inch. *Colonial Reports,* No. 500, London, 1906.

Shows in red the condition of the British frontiers in Africa to August 1906. The frontier lines that have been marked and ratified are distinguished from those which have only been surveyed, or have not yet been surveyed.

SAHARA.—Région de Beni-Abbès. Scale, 1:50,000, or 0.7 statute mile to an inch. By Captain Bérenger. *Bulletin Trimestriel* of the Geographical and Archæological Society of Oran, Dec., 1906.